

## Consumer Behavior Study NV Energy

### *Nevada Dynamic Pricing Trial of the Advanced Service Delivery Project*

#### Abstract

NV Energy's Nevada Dynamic Pricing Trial (NDPT) of the Advanced Service Delivery (ASD) project is a consumer behavior study that evaluates customer acceptance and response to time-differentiated retail rates, control and information technologies, and enhanced education efforts. The objective of the NDPT is to motivate customers to take ownership of their energy usage and bills and increase customer satisfaction in doing so.

#### Consumer Behavior Study Features

**Goals and objectives** revolve around the issue of customer ownership of their energy usage. With increased access to electricity consumption information through NV Energy's Web portal, coupled with a change in retail electricity rates, customers have better capabilities for seeing, understanding, and capturing the value from altering their consumption behavior.

**Study design** includes two pilots: (1) the southern NDPT involves a sample of approximately 9,500 customers, and (2) the northern NDPT involves a sample of approximately 6,900 customers with a test period from January 2013 to December 2014. Both pilots use a randomized encouragement experimental design and identify a large subset of the customers in each service territory to act as the study sample. A small group of randomly assigned customers from the study sample serves as the control group and remains on the existing flat rate without technology or enhanced education. NV Energy then randomly offers the remaining customers from the sample one of the treatments, "encouraging" them to opt-in to the study. Study participants are required to stay for the first year, but are provided with 100% bill protection. In the second year, the bill protection is removed, but study participants can choose to leave the NDPT after the first year, if they so choose. This is consistent with existing optional time-differentiated retail rates and allows NV Energy to study the incremental effects of bill protection on acceptance and response.

**Rate treatments** include the application of two different time-differentiated pricing designs. NV Energy is implementing a time-of-use (TOU) rate that utilizes a five-hour on-peak period with rates that differ

#### At-A-Glance

Recipient: NV Energy

State: Nevada

Timing: January 2013 – December 2014

Interim Evaluation Reporting: June 2014

Final Evaluation Reporting: June 2015

Sample Frame: ~16,400 Residential and Small Commercial Customers (Including Control Groups)

Number of Treatments: 6 (with a 7<sup>th</sup> Treatment for the Single Family Residential Class in the Southern NDPT Only)

Experimental Design: Randomized Encouragement Design (RED)

#### Rate Treatments

- Time-of-Use (Opt-in)
- Time-of-Use w/ Critical Peak Pricing Overlay (Opt-in)
- Bill Guarantee Applied for First 12 Months Only

#### Control/Information Technology Treatments

- Integrated In-Home Energy Display w/ Programmable Communicating Thermostat(s)

#### Information/Education Treatments

- Enhanced Education Package

**NV Energy** (continued)

depending on the time of year (June and September, July and August, October - May for the southern NDPT and July - September, October - June for the northern NDPT). In addition, NV Energy is augmenting the TOU rate with a substantially higher critical peak price (CPP) overlay during a four-hour weekday critical peak period in the summer (June – September for the southern NDPT and July – September for the northern NDPT). The CPP overlay is applied with a day-ahead notice to participating customers when forecasted temperatures, system load, or wholesale market prices are expected to be very high and/or when system emergency conditions are anticipated to arise. Study participants will be exposed to 18 critical peak pricing events in the southern NDPT and 16 events in the northern NDPT each year of the study.

**Control/information technology treatments** include the deployment of in-home energy displays and programmable communicating thermostats. These devices facilitate two-way information exchange and enable customers to better manage their electricity usage through improved understanding of electricity consumption of appliances and equipment.

**Information/education treatments** augment the customer Web portal access with a curriculum designed to educate customers about energy, energy usage, energy costs and rates, and energy management. Study participants in NV Energy’s enhanced education treatments are being provided with information, examples, training, and feedback through a combination of written and online materials and experiences; contacts with NV Energy installers, service representatives, and other customers; household, workplace, and online interaction; and customer behavior feedback.

**Key Milestones**

Key Milestones	Target Dates
NDPT test period begins	January 2013
Interim Evaluation Report	June 2014
NDPT test period ends	December 2014
Final Evaluation Report	June 2015

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